

2017 marked the 30<sup>th</sup> anniversary of NHDES. Much has changed in the last 30 years to help sustain a high quality of life for all citizens by protecting and restoring public health and our beloved environment. While the work is not complete, NHDES took time this year to recognize 30 accomplishments and achievements that have impacted our environment and public health for the better over the past 30 years. Each of the six issues of our Environmental News newsletter in 2017 contained a description of five of these achievements, under a specific theme for each issue. In the September/October issue, it was:

## Our Communities

### 1. Solid Waste Operator Training

*Why it matters:* In the late 1980s, it became apparent that materials being dumped into unlined landfills could cause serious public health and environmental issues. Historically, waste would be dumped into unlined pits in the ground and those pits would leach and contaminate the surrounding land and water. The transition to transfer stations created separate waste streams, which in turn, created new



challenges. The waste was ever-changing and contained many potentially hazardous materials, and it was determined there was a responsibility to put measures into place that would protect the environment, public health and safety.

*Progress in 30 years:* The New Hampshire Legislature felt that one of the best ways to ensure protection was to train and certify all solid waste facility operators, and in 1989 it established the NHDES Solid Waste Operator Training (SWOT) Program. The statute authorized NHDES to establish and administer a solid waste certification program with an annual renewal requirement and fee. New Hampshire was a pioneer in this effort; there were no other states in the nation with a program such as this. SWOT provides a certification program for all solid waste operators, regardless of the type of facility in which they work, whether it is a

landfill, transfer station, or processing and treatment facility. The SWOT Program conducts at least 22 workshops and three basic training events a year for the 1,300 operators currently certified in New Hampshire. Trainees are given the basic knowledge of the world of solid waste, how their facility fits into the puzzle and how to adequately manage the solid waste stream. Workshop topics include: used oil, universal waste, extreme weather events, pollution prevention, heat and winter safety, and electronics waste. The SWOT Program has also created a Manager Series geared primarily toward Municipally-Owned Transfer Station Managers to assist them with the requirements of their solid waste permits. The program has weathered many changes over the past few decades and is stronger than ever.



## 2. Methyl tertiary Butyl Ether (MtBE)

*Why it matters:* New Hampshire is highly dependent on groundwater. Based on a 2006 Behavioral Risk Factor Surveillance System survey, 44% of the state's citizens use private water supply wells for drinking water. Adding public water systems dependent on groundwater, approximately 60% of the state's



population obtains its drinking water from groundwater sources.

Due to its high water solubility, historical concentrations in gasoline and resistance to breaking down, MtBE became the most common man made contaminant in the state's groundwater. At peak impact, MtBE was detected in 26.7% of southeastern New Hampshire domestic water supply wells and, even today is estimated to contaminate approximately 10% of the same wells (Flannagan, et al, ES&T, 1/2017). Groundwater

contamination can impact a home or business owner's health, property values, liability and finances. Impacts extend to municipalities if municipal water sources are impacted. Even the State of New Hampshire is impacted because of increased costs to cleanup sites that are reimbursed by the State's petroleum reimbursement funds.

*Progress in 30 years:* To address MtBE impacts on our communities, New Hampshire sued MtBE manufacturers and distributors on behalf of the state's citizens and businesses. In 2013, all but one defendant settled, resulting in \$82.6 million for MtBE cleanup. After a successful trial and appeals, New Hampshire received a \$305 million payment from the remaining defendant in 2016.

Tremendous progress has been made in addressing the impact of MtBE on our communities. MtBE use was banned in 2007, approximately 20,000 above- and underground storage tanks were closed or replaced with new double-wall storage systems, and 6,550 petroleum contamination sites were cleaned up and closed. The funds obtained from the MtBE litigation are being put to work. Approximately \$276 million from the lawsuit has been set aside in the Groundwater and Drinking Water Trust Fund to address contamination, drinking water infrastructure and source water protection needs. MtBE settlement funds have already been used to replace Dover's MtBE-contaminated Griffin municipal well and for construction of water line extensions to contaminated properties located in Atkinson, Derry, Rochester, Salem, Tilton and Windham. Settlement funds have been used for gasoline release prevention activities, including the removal of 245 underground storage tanks and 16,500 tons of contaminated soil. Spill prevention equipment assistance has also been provided to over 80 motor vehicle recycling facilities. Actions taken to date mitigated MtBE contamination impacts and the establishment of the Trust Fund will provide sustainable funding for ensuring safe drinking water far into the future.



### 3. Drinking Water Source Protection

*Why it matters:* The need for concerted a effort to prevent the contamination of drinking water sources was clear before NHDES was established, and that need has been borne out over the department's 30-year history. Source water protection matters because of known, emerging, and yet-to-emerge types and sources of contamination. In 1987, leaking underground storage tanks had emerged as a groundwater contamination problem nationally and in the region.

*Progress in 30 years:* In 1986, the Federal Safe Drinking Water Act was amended to require states to develop wellhead protection (WHP) programs. In 1987, New Hampshire towns had begun to adopt aquifer protection ordinances facilitated by new aquifer maps and model ordinances and today, 104 municipalities have adopted some form of aquifer or groundwater protection ordinances. New Hampshire's Groundwater Protection Act – passed in 1991 – required WHP for new community wells and established best management practices for activities that threatened groundwater. NHDES also developed a system of incentives and technical and financial assistance to help grandfathered water systems implement protection. Today, more than 75% of the state's non-transient public water systems have WHP programs, and 97% of sources used by community water systems have some form of local- or state-level protection in place. There are also more recent opportunities to better protect drinking water; the legislation that established the Drinking Water and Groundwater Trust Fund with proceeds from the State's successful judgement against a defendant in the MtBE lawsuit calls out drinking water protection as one of the fund's purposes. NHDES is also learning how to best manage contaminants such as per- and polyfluoroalkyl substances (PFAS), and toxins from cyanobacteria (blue-green algae) that have emerged in recent years.

### 4. Nonpoint Source Management Program

*Why it matters:* Nonpoint source (NPS) pollution contributes to over 90% of the water pollution problems in New Hampshire and impacts from NPSs continue to contribute to declining surface water quality in the state. NPS pollution in New Hampshire is largely related to contaminants in stormwater



runoff from developed lands, landscape and turf management activities, road maintenance activities and agriculture. In addition, septic systems and habitat and hydrologic modification have an impact on water quality. Management of NPS problems in New Hampshire relies on a mix of regulatory and voluntary programs that focus on protecting clean water where it currently exists, and restoring it where development and other environmental stressors



have made the water unsuitable for fishing, swimming or other uses. The problems caused by NPS pollution are compounded by changing climatic conditions.

*Progress in 30 years:* Under Section 319 of the federal Clean Water Act (CWA), enacted in 1987, the state receives grant money that supports a wide variety of activities to reduce NPS pollution and improve aquatic habitats. These activities are described in the state-wide NPS Management Program Plan, the first of which was written in 1989. Based on that first plan, money was provided to project partners across New Hampshire to address agricultural and shoreline erosion. Over the years, as more federal money became available through EPA, the diversity of projects has expanded. Activities now cover technical and financial assistance, training, monitoring and demonstration projects.

Today, the NHDES Watershed Assistance Section (WAS) works closely with municipalities, universities, watershed associations and other organizations to develop watershed-based plans and implement clean-up projects. As a result of these partnerships spanning the last three decades, over 11,749 tons of sediment, 31,050 pounds of phosphorus and 7,486 pounds of nitrogen are removed each year from New Hampshire surface waters. Two current initiatives illustrate novel approaches to NPS problems. The Soak Up the Rain NH Program has trained local volunteers to install pollution reduction practices, such as rain gardens and infiltration steps, in 26 locations. The New Hampshire Salt Certification Program (Green SnowPro) has trained and certified over 800 winter maintenance professionals to reduce salt on parking lots and roads while protecting public safety. The ultimate measure of success for the NPS program is clean water. To date, the New Hampshire NPS Management Program and project partners have documented the removal of eight waterbodies from the list of impaired waters. Further, 62 watershed-based plans have been written to guide the cleanup of many more lakes and rivers.

## **5. Asset Management**

*Why it matters:* The 2017 American Society of Civil Engineers' (ASCE) Report Card for America gave a "D" grade for drinking water infrastructure; New Hampshire received a C-minus. The task of upgrading water systems anywhere is daunting and can seem cost-prohibitive for most communities, and that's especially true for rural water systems where there are fewer rate payers paying in. In New Hampshire, 85% of the water systems are considered rural, serving fewer than 500 people each. Water infrastructure has reached a point of now or never as far as making sure that we are able to replace and rebuild to ensure the reliability and the customer service that ratepayers expect to receive.

*Progress in 30 Years:* The water industry has identified Asset Management (AM) as the potential savior as we move into the future. Initially strictly a financial term, AM has evolved into a holistic discipline that focuses on the culture, actual job functions and responsibilities of the stakeholders in the industry. AM's evolution has made the biggest leaps and bounds over the last decade or so with the help of technology. Recently, NHDES has seen technology provide decision makers with data-driven tools that allow efficiency and sustainability. Water utilities have adopted smart technology solutions, such as Smart metering and other wireless technologies, to streamline their operations and proactively address issues with the nation's water infrastructure.



In the last five years, NHDES has made AM a priority. Over the course of that time, the agency has issued 52 grants in 48 communities for a total of \$817,885 for Drinking Water Asset Management Programs. Although the AM grant is a newer tactic provided by NHDES, the agency has always been heavily involved in our communities, aiding them with technical, financial and managerial assistance. NHDES has provided technical assistance to 687 communities dating back to 1997, involving 1,070 site visits for the drinking water communities. These figures are expected to grow as NHDES continues with the effort to improve the quality of the drinking water infrastructure.



New Hampshire Department of Environmental Services  
PO Box 95, Concord, NH 03302-0095,  
(603) 271-3503; [info@des.nh.gov](mailto:info@des.nh.gov)